

CORRESPONDENCE

A new species and a new combination of Arcypteridae from China (Orthoptera: Acridoidea)

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Abstract A new species, *Chorthippus* (*Altichorthippus*) *qixingtaiensis* **sp. nov.** from China is described in this paper. The new species is similar to *C. (A.) changtunensis* Yin, 1984, but different by: prozona longer than metazona, maximum width of medial area of tegmen about 2 times as maximum width of cubital area in male, base of hind femur without dark sloping stripe on inner side and length of interspace of mesosternum shorter than minimum width in female. A new combination *Magaulacobothrus tianshanensis* (Zheng, Ma & Ren, 2009) **comb. nov.** is reported. The type specimens are deposited in the College of Plant Protection, Shandong Agricultural University, Taian, Shandong, China.

Key words Orthoptera, Acridoidea, Arcypteridae, *Chorthippus*, new species, China.

The genus *Chorthippus* was erected by Fieber in 1852, with *Acridium albomarginatum* De Geer, 1773 as type species. Up to the present, the genus is divided into three subgenera, *Chorthippus* Fieber, 1852, *Glyptobothrus* Chopard, 1951 and *Altichorthippus* Jago, 1971. About 224 species are reported under the genus all over the world, including a junior homonym, *Chorthippus tianshanensis* Zheng, Ma & Ren, 2009 (Eades *et al.*, 2013).

The subgenus *Altichorthippus* Jago, 1971 contains 46 species. Among them, only one species, *C. (A.) uvarovi* Bey-Bienko, 1929 is distributed in Kazakhstan, the other 45 species are distributed in China (Zaysan Lake, Saur Mts.) (Bey-Bienko, 1925, 1929; Chang, 1937, 1939; Wang & Zheng, 1992, 1994, 2012a, 2012b; Ma *et al.*, 1994, 1995; Yin *et al.*, 1996, 2010, 2012; Zheng *et al.*, 1996, 2009; Latreille, 1802; Zubowsky, 1900; Miram, 1907; Uvarov, 1935; Bey-Bienko & Mishchenko, 1951; Zheng & Tu, 1964; Jago, 1971; Harz, 1975; Zheng, 1980; Liu J-P, 1981; Xia & Jin, 1982; Jin & Lin, 1982–83; Liu, 1984; Yin, 1984; Li & Yin, 1987; Lian & Zheng, 1987; Liu & Fan, 1992; Jia & Liang, 1993; Zhang *et al.*, 1993; Zheng & Xia, 1998; Chen *et al.*, 2011; Li & Jiang, 2011; Eades *et al.*, 2013).

In the present paper, one species, *Chorthippus* (*Altichorthippus*) *qixingtaiensis* **sp. nov.**, is reported as new to science, from Qixingtai, Jinan, Shandong Province, China. The junior homonym of *C. tianshanensis* Liu & Fan, 1992, *C. tianshanensis* Zheng, Ma & Ren, 2009 is reported as a new combination of the genus *Magaulacobothrus*.

Chorthippus* (*Altichorthippus*) *qixingtaiensis* **sp. nov.* (Figs 1–6)

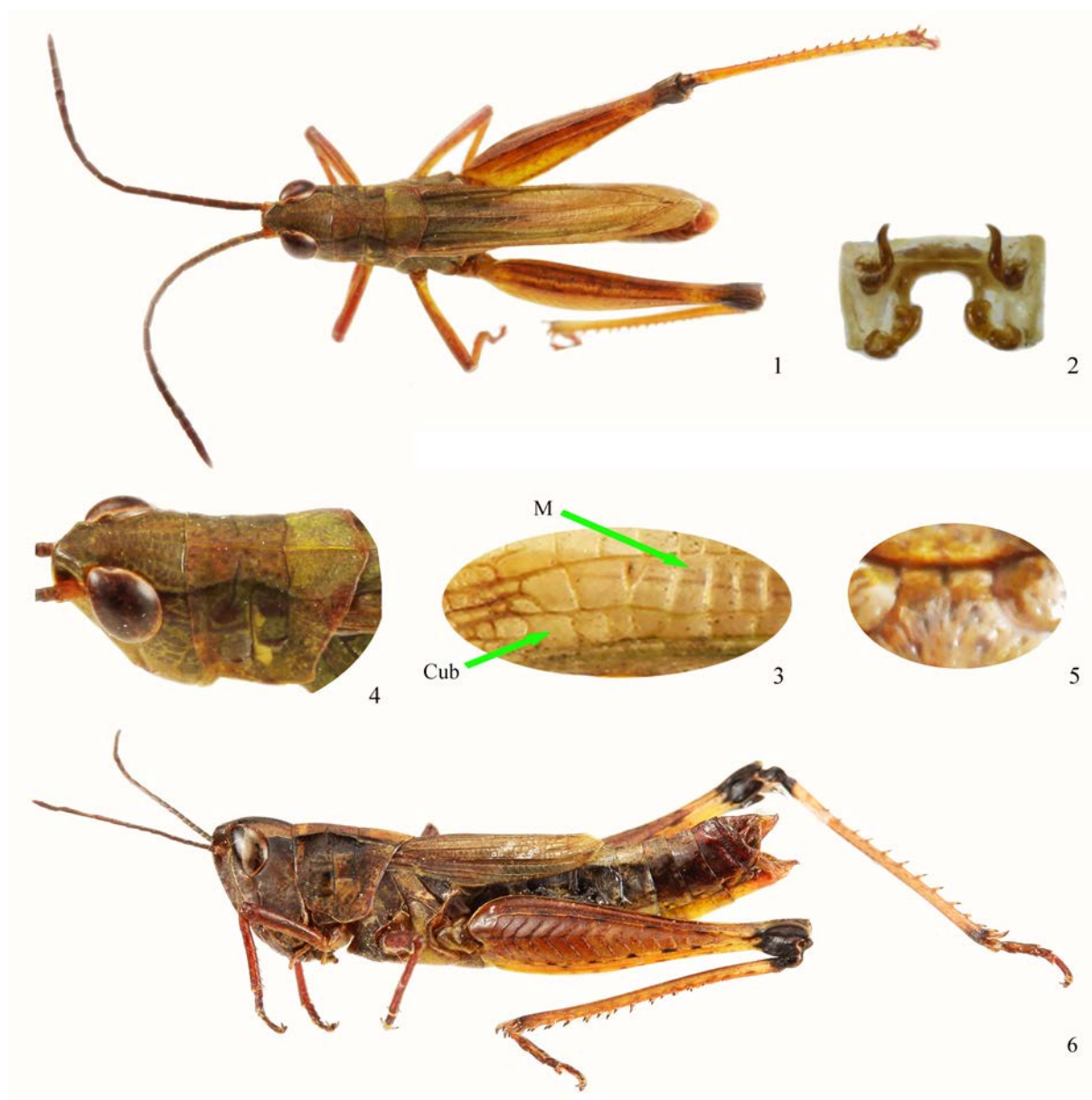
Holotype ♂, Shandong, Qixingtai (36°30'N, 117°26'E; elev. 680 m), 3 August 2013, coll. Bao-Hua Ye. Paratypes: 5♂, 2♀, same data as holotype; 4♀, Shandong, Qixingtai (36°30'N, 117°26'E; elev. 680 m), 23 August 2012, coll. Bao-Hua Ye.

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Male. Body small in size. Head shorter than pronotum. Face slightly sloping backward. Frontal ridge broad at base, narrowed at median ocellus. Fastigial foveolae oblong, length 4 times as long as width. Eyes oval, vertical diameter about 1.5 times as long as horizontal diameter and 1.8 times length of subocular suture. Antennae filiform 22 segmented, reaching base of hind femur, length of a segment in middle of antennae 3.0 times width. Median carina of pronotum distinct, cut by hind transverse sulcus only, prozona 1.2 times metazona in length, lateral carinae curved in prozona, anterior margin of pronotum straight nearly and posterior margin obtuse angle. Length of interspace of mesosternum equal minimum width. Lateral lobes of metasternum separated. Tegmina shorter, reaching end of epiproct, precostal area very short, not reaching midpoint of tegmen; maximum width of medial area of tegmen about 2 times as maximum width of cubital area. Hind femur robust, the length 4.0 times its width, tip of lower kneelobe rounded. Posterior tibia with 12



Figs 1–6. *Chorthippus* (*Altichorthippus*) *qixingtaiensis* sp. nov. 1. Dorsal view, ♂. 2. Epiphallus. 3. M area and cubital area of tegmen, ♂. 4. Head and pronotum, ♂. 5. Interspace of mesosternum, ♀. 6. Lateral view, ♀.

spines on inner side and 13 spines on outer side, outer apical spine absent. Arolium slightly shorter than claw. Tympanal organ developed, tympanic cavity ellipse. Epiproct tongue shaped, with median longitudinal sulcus on basal half part. Cercus conical. Subgenital plate short conical, surpassing apex of epiproct distinctly. Epiphallus with arch bridge, ancorae curved inward, apex pointed, lophi curved.

Body yellowish-brown. Eyes brown. Antennae brown. Tegmina yellowish-brown. Fore and median legs yellowish-brown. Hind femur yellowish-brown, inner side without dark sloping stripe at base, knee lobe dark. Hind tibia orange, base black.

Female. Body larger than male in size. Eyes small, vertical diameter about 1.7 times as long as horizontal diameter and 1.5 times length of subocular suture. Tegmina shorter, not reaching hind margin of 4th abdominal tergum, medial area of tegmen about 2 times as cubital area in width. Length of interspace of mesosternum shorter than its minimum width. Subgenital plate longer, hind margin angulated in middle. Ovipositor valves shorter, apex hooked, upper side smooth. Others as same as male.

Measurements. Length: body, male 15.5–17.5 mm, female 22.5–24.5 mm; tegmina, male 9.5–11.0 mm, female 7.5–8.5 mm; hind femur, male 9.5–11.0 mm, female 11.7–14.2 mm.

Diagnosis. The new species is allied to *Chorthippus* (*Altichorthippus*) *changtunensis* Yin, 1984, but it differs from the latter in four characters (Table 1).

Etymology. The specific epithet is named Qixingtai, the type locality.

Table 1. Comparison of *Chorthippus* (*Altichorthippus*) *qixingtaiensis* sp. nov. and *C. (A.) changtunensis* Yin, 1984.

	<i>C. (A.) qixingtaiensis</i> sp. nov.	<i>C. (A.) changtunensis</i> Yin, 1984
Pronotum	Prozona longer than metazona	Prozona equal to metazona
Maximum width of medial area in male	2 times as maximum width of cubital area	1.5 times as maximum width of cubital area
Inner side of hind femur	without dark sloping stripe at base	with dark sloping stripe at base
Interspace length of female mesosternum	Shorter than minimum width	Equal minimum width.

***Magaulacobothrus tianshanensis* (Zheng, Ma & Ren, 2009) comb. nov.**

Chorthippus tianshanensis Zheng, Ma & Ren, 2009: 875. Type locality: China (Xinjiang).

Two homonymic species were reported under the genus *Chorthippus*, *C. tianshanensis* Liu & Fan, 1992 and *C. tianshanensis* Zheng, Ma & Ren, 2009. The former species has the priority. However, as the sister species of the latter species, *Chorthippus rufitibis* Zheng, 1989, is transferred to the genus *Magaulacobothrus* (Kim, 2008), the status of the species *tianshanensis* Zheng, Ma & Ren, 2009 should be transferred to *Magaulacobothrus*, too.

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